FACT SHEET FOR NPDES PERMIT NO. WA-005067-9

DEL MONTE FOODS PLANT #125

SUMMARY

The Del Monte Foods Corporation (Permittee) owns and operates a fruit processing facility in Yakima, Washington and is seeking renewal of its NPDES Permit. This permit provides coverage for discharge of container cooling water to the City of Yakima's stormwater collection system and, ultimately, the Yakima River. Container cooling water is discharged to the storm sewer for approximately three months annually during the autumn canning season. Process wastewater discharges to the City of Yakima's Wastewater Treatment Plant**,** which is permitted by the delegated City of Yakima.

Del Monte has plans to improve its contact can cooling water system by installing a heat exchanger to capture heat prior to passing the cooling water through the cooling tower. The plant also plans to relocate the cooling tower to further improve performance during the hottest part of the canning season. The current permit contains a four year Schedule of Compliance to provide Del Monte an opportunity to submit plans for approval and install the heat exchanger, relocate the cooling tower and monitor performance once the improvements have been made. The data collected following the improvements to the cooling system will be used to establish permit limits for the next permit term.

It was found, during the course of the current permit period, that the storm drain which Del Monte discharges to intersects with an irrigation pipe containing cold water at a considerable flow rate at the south end of the Del Monte property. The newly discovered flow is that of the New Shanno Ditch irrigation system, which runs under the City of Yakima approximately 3 miles after leaving the Del Monte facility prior to discharge to Spring Creek then to Wide Hollow Creek, which flows a combined additional 2 miles before its confluence with the Yakima River. An ambient monitoring plan for the New Shanno Ditch is part of the Schedule of Compliance. This data will be used to verify any impact to New Shanno water quality and may be used for establishing a mixing zone if appropriate in the next permit term.

This permit establishes effluent limitations for Flow, Temperature, Fats, Oils and Grease, 5-day Biochemical Oxygen Demand, Total Suspended Solids, Total Residual Chlorine, and pH.

The monitoring program has changed from the current permit, monitoring for copper and lead in the stormwater prior to the discharge will replace well water analysis. The lead and copper concentrations in the facility's water supply have been consistently below the method detection levels during the course of the permit period. It is the quality of the water in the storm drain prior to the Del Monte discharge, which has the potential in impair the water quality of the Yakima River. A Reasonable Potential analysis using the ambient lead and copper concentrations in the Naches River, the New Shanno diversion source, and the Permittee's discharge shows no reasonable potential and therefore no limit for lead or copper will be established in the proposed permit.

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the State of Washington to administer the NPDES permit program. Chapter 90.48 RCW defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Del Monte Foods Corporation
Facility Name and Address	Del Monte Foods Plant #125 108 W. Walnut Street Yakima, WA 98902
Type of Facility	Pear, apple and cherry processor
SIC Code	2033
Discharge Location	City of Yakima stormwater collection system, then to the Yakima River, River Mile 109 Latitude: 46° 35' 47" N Longitude: 120° 30' 21" W
Water Body ID Number	WA-37-1040

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

The Del Monte Foods Plant #125 occupies a large tract of land near the urban core of the City of Yakima, Washington. The facility is located in the SW ¼ of Section 19, Township 13 N, Range 18 E. W. M.

History

The Del Monte Foods Plant #125 has been in operation for many years. In the 1950's, it was one of the six original industrial dischargers to the City of Yakima (City) POTW. In 1958, the City constructed a separate sewer system and a sprayfield treatment system, located at the POTW site, to treat the high organic process wastewater which had overloaded the municipal treatment facility. At the present time, Del Monte Foods continues to discharge process wastewater to the industrial waste collection system, but the discharge is now treated at the wastewater treatment plant because the sprayfield is decommissioned. Container cooling wastewater from Del Monte Foods is discharged to the City's storm water collection system.

Industrial Process

Del Monte Foods Plant #125 produces canned pears and cherries in metal containers for resale. They also brine cherries in bulk bins. The cooking process occurs in hot water and live steam cookers arranged as long tunnels. Container cooling wastewater is generated by cooling the heated metal containers with water, after the canning process and prior to labeling. During this cooling process, an occasional container may leak, causing sporadic occurrences of organic

loading to be present in the container cooling wastewater, which is subsequently discharged to surface waters of the State. Chlorine is added to the container cooling water in order to sanitize it. The cooker and cooler bearings are lubricated with food grade lubricants, which may result in incidental contact with the hot water by residues coming through the bearing seals. Container cooling water is generated for a maximum of three months of the year, from approximately August to November, during the pear canning season.

Fruit solids, which are largely intact but separated from the canning process, are sent to fruit juice or other food processors in the area.

Discharge Outfall

The actual discharge outfalls of the facility are the points of connection to both the City's storm water collection system (#001) and industrial waste sewer (#002). Container cooling water is discharged to the storm water system directly underneath the facility.

In 2003 Department personnel toured the facility with Del Monte personnel to investigate the source of an apparent discrepancy among temperature readings taken by the Permittee at three locations on the plant site. These temperature readings were part of the Analysis of All Known, Available, and Reasonable Methods of Treatment (AKART) conducted by the Permittee. At issue were temperatures in the analysis were reported to be cooler upon leaving the plant at the south boundary than those entering the plant property to the north. A decline in water temperature was considered counterintuitive based on the fact that the discharge from the cooling tower fluctuates around 40ºC and is centrally located between the north and south ends of the plant property. Table 6 in the Permittee's Final Engineering Report for Container Cooling Water Treatment System shows that wastewater leaving the southern edge of the plant is on average 1.9ºC less than stormwater entering the plant property.

The Department with Del Monte personnel visually determined that the 24-inch stormwater pipe intersects with a larger 42-inch pipe that contains a substantial and colder flow on the south side of the Del Monte property. Evidently the Del Monte staff was not aware their temperature probe access positioned the probe in the colder flow and not the warmer stormwater flow containing the Del Monte discharge. Research has determined that the 42-inch pipe at the south side of the Del Monte property is part of the New Shanno irrigation system, which was constructed in 1911. The intersection of the stormwater pipe and the New Shanno pipe was previously thought to interconnect 3 miles farther to the southeast. It is not clear if other stormwater pipes or other irrigation flows interconnect at other locations under Yakima with the New Shanno pipe carrying the Del Monte discharge. The New Shanno pipe discharges to Spring Creek approximately 3 miles from the Del Monte plant. The pipe is presumed to be exclusively underground to Spring Creek that flows then to Wide Hollow Creek. From the end of the underground pipe, it is an additional 2 to 3 miles before Wide Hollow Creek flows into the Yakima River, just north of the Yakima Wastewater Treatment Plant.

Research conducted by the Department's engineer revealed the New Shanno Irrigation Company initial water right claim originated on June 30, 1871. The New Shanno system was allocated 3,149 acre feet of water per year by adjudication of the water rights in 2003. The legal allotment is scheduled in this manner: not more than 9.38 cfs at any time between April and August, in September not more than 6.25 cfs and 4.69 cfs in October. The system is shut down in November. Based on visual inspections the Department and the City engineer suspect the flow may be greater than the flow allotted, but since this flow is essentially return flow to the Yakima it is of not great concern at this time.

PERMIT STATUS

The current permit for this facility was issued on February 1, 2002. The current permit placed effluent limitations on the container cooling water discharge for the following parameters: Flow; Fats, Oils and Grease (FOG); 5-day Biochemical Oxygen Demand (BOD_5); Total Suspended Solids (TSS); Chlorine; Temperature; and pH. The permit contains interim and final effluent limits; the former were included to allow the Permittee to develop a Pretreatment Engineering Report to determine AKART for the container cooling water discharge. The interim limits regulated Free Residual Chlorine, while the final limits established a ceiling for Total Residual Chlorine. The final limits have not been instituted because the can cooling water treatment engineering report has yet to be approved by the Department.

An application for permit renewal was received by the Department on January 13, 2006 and accepted by the Department on January 17, 2006.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

A compliance inspection without sampling was conducted on October 20, 2003.

During the history of the current permit, the Permittee has remained in compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department.

WASTEWATER CHARACTERIZATION

Conventional Pollutants

The current permit requires monthly sampling of the container cooling water discharge during the months canning occurs, for the following parameters: BOD_5, TSS, FOG, pH, Temperature, Free Residual Chlorine, and Total Residual Chlorine. Hardness and Alkalinity are analyzed annually.

Table 1: Wastewater Characterization of Conventional Pollutants

Parameter	Units	Mean Monthly	Maximum Daily	No. of Analyses
BOD_5	mg/L	3.61[a]	6.3	10
TSS	mg/L	1.6	6	10
FOG	mg/L	2.8	8.1	10
Total Residual Chlorine	mg/L	0.27	0.46	10
Temperature	ºC	41.2	46.1	10
Hardness	mg/L	97.3	100	3
Alkalinity	mg/L	71.1	95.2	3
pH	Std. Units	Not Reported	6.1-8.0	Not Reported

[a] BOD_5 was not present in container cooling water effluent samples at a concentration greater than the Method Detection Level of 5 mg/L.

BOD and TSS levels are only slightly higher than those present in the facility's water supply.

Metals Pollutants

Del Monte characterized its container cooling water effluent for metals from a sample taken on September 20, 2000. Copper and lead were the only metals detected by the analysis. The reported concentration levels are typical of cooling tower background concentrations.

Del Monte characterized its container cooling water effluent for copper and lead as part of a regular monitoring requirement of the current permit. The results are reported in Table 2.

Table 2: Wastewater Characterization of Metals Pollutants 2003-2005

Parameter	Concentration, in µg/L	
	Avg. Monthly	Maximum
Copper	4.2	5.8
Lead	0.81	1.1

DESIGN CRITERIA CAN COOLING WATER EVAPORATIVE TOWER

The design criteria for the BAC Model VAT-1020A Serial # 79-0416M are taken from a fax sent by Joseph H Schauf., Inc., which is contained in Appendix E of the engineering report prepared by Del Monte and are as follows:

Table 3: Design Standards for BAC Model VAT-1020A Serial # 79-0416M

Parameter	Design Quantity
Maximum Flow (2 cell unit)	650 gpm
Cooling Capability	27.7 ºC *

* Entering temperature 54.4ºC, leaving temperature 26.7ºC at wetbulb of 22.2ºC

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (40 CFR 131.36). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington have been determined and are included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Technology-based effluent limitations for the fruit processing industry are detailed in 40 CFR Part 407. However, these regulations address only process wastewater streams, while this permit addresses only the container cooling water discharge from the facility. Process wastewater discharges will be addressed in an upcoming State Waste Discharge permit issued by the City of Yakima.

Current permits determined the container cooling wastewater to be in the same category as "non-contact cooling water". That determination follows the EPA's March 1974 *Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Preserved Fruits and Vegetables Point Source Category* (40 CFR Part 407), and thereby allowed the wastewater to be discharged to the City's storm water collection system with minimal treatment and few effluent limitations. The last permit issued by the Department to Del Monte established limits addressing additional pollutants, which were based on best professional judgment (BPJ).

Temperature

At this time, the State's Water Quality Criteria for temperature in Class A receiving waters is 18ºC. WAC 173-201A-130(141) details a "specific condition" for this segment of the Yakima River: temperature shall not exceed 21.0ºC due to human activities. All unclassified surface waters that are tributary to Class A waters, which includes storm water sewers, are by default designated Class A waters (WAC 173-201A-120(6)). However, the tributary does not, by regulation, take on the 21.0ºC special condition. In the best professional judgment of the Department, the 21.0ºC criteria is an appropriate target for this facility's discharge because (1) there is unlikely to be any aquatic life in the storm sewer and (2) the discharge is likely to receive substantial cooling while being conveyed through 3 miles of the New Shanno Ditch irrigation system's 42-inch pipe. (This discussion would normally be included in the section of the fact sheet titled SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS; it is included here to provide context for the following paragraphs.)

The Permittee is cautioned that, at this time, the State's Surface Water Quality Standards are undergoing revision and temperature is a key component. Although an AKART analysis does not focus on achievement of the water quality standards, regulations require the consideration of compliance of the standards in determining AKART.

The current permit required Del Monte to submit a pretreatment engineering report to address, among other issues, the lowest consistently achievable temperatures after the application of AKART. The permit established "AKART for container cooling wastewater to be the use of, at least, a cooling tower or another Department-acceptable method." This AKART determination was based on information in the EPA *Development Document*. Del Monte has installed a cooling tower and the system has been in use during the present permit cycle.

In support of the current permit, Del Monte conducted a study which evaluated the impacts of temperature and residual chlorine to waters in the storm sewer. The study was conducted during the 1996 processing season, from August 1st to November 14th. Temperatures and flows were measured by Del Monte staff on a weekly basis at three points: upstream of the discharge point, at the discharge point, and downstream of the discharge point. A summary of the resulting temperatures, flows and chlorine concentrations is presented in Table 4. Data for each of the

sampling points are arranged on the table from upstream to downstream of the discharge point, from left to right in the table, respectively.

Table 4: Cooling Water Discharge Study Results

1996 Processing Season Report											
North Manhole			**Cooling Water**			**South Manhole**			**Box Lot Manhole**		
Flow gpm	Cl_2 mg/L	Temp °C	Flow Gpm	Cl_2 mg/L	Temp °C	Flow gpm	Cl_2 mg/L	Temp °C	Flow gpm	Cl_2 mg/L	Temp °C
821	0	22.2	102	1.54	45.0	857	0.06	29.4	817	0	28.9

2002 Final Engineering Report for Container Cooling Water Treatment System Report *						
Ambient Air Temperature		**North of Plant Prior to Cooling Tower Discharge**	**Cooling Tower Outfall**	**Ditch Water at Cooling Tower**	**Ditch Water Directly South of Plant**	**Ditch Water at Southern Most Boundary**
Avg	30.1	21	34	33.8	32.2	19.1
Median	30.6	21.2	33.3	32.2	33.4	18.6
Min	10.6	15.9	27.8	26.1	22.1	16.1
Max	46.1	36.5	50.0	50.0	47.7	30.8

* Data presented is the 2002 Year End Summary, Table 6, contained in the report.

Water flows from north to south in the sewer, as reflected by the temperature results. The flow results are somewhat ambiguous, because the average upstream flow of 821 gpm and the discharge flow of 102 gpm should be greater than the downstream flow of 857 gpm. The 1996 study surmised that this discrepancy may be explained by the presence of unmapped cross-connections in the storm sewer, which will be discussed later. The Department has since discovered that this is indeed the case.

The numerical results of the study could not be used in establishing a temperature effluent limit for the current permit because installation of the cooling tower had altered the circumstances of the discharge and its impacts to the receiving water. However, the study results clearly demonstrated that: the cooling water discharge results in a net increase in the downstream temperature of the water in the sewer, and, the downstream temperature significantly exceeds the water quality criteria of 21°C. Therefore, the current permit contained a Schedule of Compliance, which required Del Monte to demonstrate compliance with AKART and achievement of the lowest consistently achievable temperatures.

2002 AKART Analysis

On January 21, 2003 Del Monte submitted its 2002 Final Engineering Report for Container Cooling Water Treatment System Del Monte Foods Plant #125. The Department has not approved the report at this time (March 30, 2006) because Del Monte plans to install a heat

exchanger to capture can cooling water waste heat to pre-heat the boiler water and thereby conserve energy. This process is expected to lower the temperature of the water going to the cooling tower and ultimately the discharge. Del Monte also plans to relocate its cooling tower to optimize cooling efficiencies. The Department believes, given the proposed improvements to the contact water cooling system that performance based temperature limitations are appropriate when coupled with a Schedule of Compliance condition in the proposed permit.

As discussed earlier in the Outfall Section, the Department with Del Monte personnel found the 24-inch storm drain intersects with a 42-inch pipe carrying a significant flow. This flow is part of the New Shanno Ditch irrigation system. It is surmised Del Monte staff were inadvertently collecting the temperature of the New Shanno Ditch water and not the wastewater stream, which led to an assumption regarding the cooling potential of the storm drain. The Schedule of Compliance will require Del Monte to develop a monitoring plan that samples New Shanno Ditch at the point the discharge is mixed and preferably prior to and after mixing some distance beyond Del Monte property so the Department can assess the risk and determine a mixing zone, if appropriate.

The cooling tower Del Monte installed does not provide adequate cooling of the discharge to allow compliance with the 21ºC water quality criteria at the "end of pipe". The DMR data indicate the lowest temperature achieved in 2003-2005 timeframe is approximately 35ºC (95ºF). The temperature limit contained in the proposed permit will be based on the 99th percentile of the last three years of cooling tower performance.

Table 5: Temperature Limitation
99th Percentile
46ºC

The Department modeled the effluent flow and has determined once the effluent flow is combined with the New Shanno Ditch flow, the temperature is predicted to return rapidly back to ambient. The Cormix 4.3 dilution model scenario used an ambient water temperature of 19ºC and an effluent temperature of 47ºC. The model predicted a return to 19ºC within a short distance. In addition the effluent will flow 3 miles underground and an additional 2-3 miles in Spring Creek prior to entering the Yakima River. For the above reasons the Department is confident the effluent at 46ºC will not present a risk to fish habitat nor degrade Yakima River water quality during this permit period.

EFFLUENT LIMITATIONS BASED ON BEST PROFESSIONAL JUDGMENT

BOD_5, TSS and FOG

At present, the State's Surface Water Quality Standards still do not regulate these pollutants with numerical criteria. However, *all* discharges to waters of the State must comply with the narrative standards, such as the antidegradation regulation (WAC-173-201A-070).

The current permit established and the proposed permit will establish the same effluent limitations for these pollutants:

Table 6: BOD_5, TSS and FOG Effluent Limits in the Proposed Permit

Parameter	Monthly Average	Daily Maximum
BOD_5	10 mg/L	15 mg/L
TSS	10 mg/L	15 mg/L
FOG	10 mg/L	15 mg/L

In the best professional judgment of the Department, these effluent limitations for BOD_5, TSS and FOG in the discharge represent the most stringent and reasonably achievable limitations for the Permittee's discharge. Except for the rare instances in which a container bursts while being cooled, levels of BOD and TSS are unlikely to be more than what is present in the facility's water supply.

This 10/15 treatment standard is significantly more stringent than the secondary treatment standards for municipally-owned sewage treatment plants. This judgment is based in part on an equity argument: that the Department has issued permits with these limitations to several sewage treatment plants and industrial dischargers to the Yakima River, who essentially endorse this treatment standard. It is also the Department's considered opinion that the discharge of BOD_5, TSS and FOG at these levels will not degrade the water quality of the Yakima River.

Total Residual Chlorine

The current permit established a daily maximum TRC limit of 0.5 mg/L. In the best professional judgment of the Department, this effluent limit is appropriate for the following reasons: (1) the Permittee's discharge into the storm sewer will mix with water containing reducing agents, such as leaves and other organic debris, which should aid in neutralizing the chlorine; (2) the Permittee's discharge will travel approximately 3 miles through a mixed storm sewer/irrigation return flow pipe before discharging to the Spring Creek, which flows an additional 2 to 3 miles before reaching the Yakima River, which aids in dissipation of the chlorine; (3) the storm water sewer/irrigation return flow pipe is unlikely to have aquatic life that would be impacted by this discharge; and (4) achieving lower concentrations would require installation of a dechlorination system, which could result in the introduction of dechlorination byproducts to the environment. The 1996 *Cooling Water Discharge Study* demonstrated that no residual chlorine was present in the storm sewer at the box lot sampling point.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The

Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

Numerical Criteria for the Protection of Aquatic Life

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

Numerical Criteria for the Protection of Human Health

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

Narrative Criteria

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

Antidegradation

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and has determined ambient water quality is below the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

Critical Conditions

Surface water quality-based limits are derived for the water body's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

Description of the Receiving Water

The facility discharges to the City of Yakima storm water sewer, which flows into the New Shanno Irrigation Ditch, Spring Creek and, ultimately, the Yakima River. The storm water sewer and the New Shanno Ditch are both classified as Class A waters by regulation and case law as well. The Yakima River is designated as a Class A receiving water in the vicinity of the outfall. Other nearby point source outfalls include treated effluent from the City of Yakima's Sewage Treatment Plant and Snokist Growers. Significant nearby non-point sources of pollutants include storm water discharges from other unquantified outfalls. Characteristic uses include the following:

> water supply (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

Segments of the Yakima River near the location of the Spring Creek-Yakima River confluence are 303(d) listed as an impaired water body for pH. Other locations within a few miles of the discharge list Fecal Coliform, Temperature and the pesticides Endosulfan, DDT, and Dieldrin. In addition, fish tissue is also listed for Total PCB, 4,4'-DDE, 4,4'-DDD and Alpha-BHC

Surface Water Quality Criteria

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Table 7: Surface Water Quality Criteria for Conventional Pollutants

Parameter	Criteria
Dissolved Oxygen	8 mg/L minimum
Temperature	21º Celsius maximum or incremental increases above background
pH	6.5 to 8.5 standard units, with an allowable variation of 0.5 units
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

Consideration of Surface Water Quality-Based Limits for Numeric Criteria

Pollution levels in the proposed discharge exceed water quality criteria. Technology-based controls which the Department considers AKART have not been determined. Therefore, mixing zones are not being authorized this permit term. Following completion of the Schedule of Compliance in the proposed permit, a mixing zone may be established in the next permit cycle.

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants—their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of surface water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

pH— Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, the technology-based effluent limitation for pH was placed in the permit.

Toxic Pollutants—Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge and receiving storm drain water: chlorine, lead and copper. A chlorine limit has been established using Best Professional Judgment, as discussed earlier in fact sheet.

Table 8, depicts the concentrations of lead and copper found in the storm drain water prior to the Del Monte discharge.

Table 8: 2002 North of Plant Storm Drain Lead and Copper Sampling Results

Month Sampled	Lead in µg/L	Copper in µg/L
August	*	*
September	7.3	66.2
October	3.6	146
November	7.4	231
Average	6.1	147.7

* Samples were not collected in August 2002 because of no flow in the storm drain.

Table 9 depicts the lead and copper concentrations found in the 2002 study.

Table 9: 2002 Cooling Tower Water Lead and Copper Sampling Results

Month Sampled	Lead in µg/L	Copper in µg/L
August	1.3	8.1
September	0.9	4.35
October	1.1	5.45
November	3.8	54
Average	1.8	17.98

Table 10 (the same as Table 2), is presented here to contrast the more recent results of monitoring within the last three years against the older data.

Table 10: Cooling Tower Water Lead and Copper Sampling Results 2003-2005

Parameter	Concentration, in µg/L	
	Avg. Monthly	Maximum
Copper	4.2	5.8
Lead	0.81	1.1

The Department has determined that the water quality in the storm drain before the Del Monte discharge does not meet the water quality criteria. Stormwater lead and copper levels are at times greater than 10 times the water quality criteria. This situation is not unusual for stormwater considering the water originates primarily from streets and parking lots. The discharge from Del Monte is a fraction of the concentrations found in the stormwater.

The Department believes the quality of the New Shanno Ditch water is the appropriate measure by which to assess the reasonable potential of the Del Monte discharge to exceed the water quality criteria. The New Shanno Ditch water is water diverted from the Naches River. The Department's Environmental Assessment Program monitored Naches River metals in 2002. The maximum values for lead and copper found at the Naches River site in 2002 were used in the reasonable potential analysis. The values were 0.41µg/L of lead and 1.38 µg/L copper. With the exception of the chronic copper all dilution factors were set at 1:1. The chronic copper dilution factor was set at 2:1. This is conservative given the high flow of the New Shanno Ditch relative to the Del Monte discharge. There is no reasonable potential for the Del Monte #125 discharge to exceed the water quality for lead or copper, therefore no limit for lead or copper will be established in the proposed permit (see Appendix C).

Whole Effluent Toxicity

Toxicity caused by unidentified pollutants is not expected in the effluent from this discharge as determined by the screening criteria given in Chapter 173-205 WAC. Therefore, no whole effluent toxicity testing is required in this permit. The Department could require effluent toxicity testing in the future if it receives information that toxicity may be present in this effluent.

Human Health

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the State by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health. The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

Sediment Quality

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This Permittee has no discharge to the ground and therefore no limitations are required based on potential effects to ground water.

COMPARISON OF PROPOSED EFFLUENT LIMITS WITH THE CURRENT PERMIT

Table 9: Effluent Limitations in this Permit

Parameter	Current Limits		Proposed Limits	
	Monthly Average	**Daily Maximum**	**Monthly Average**	**Daily Maximum**
Flow [a], in MGD	0.35	0.48	0.35	0.48
Temperature, in °C	N/A	47.0	N/A	46.0
Total Residual Chlorine, in mg/L; lbs/day	N/A	0.5; 2.0	N/A	0.5; 2.0
FOG, in mg/L; lbs/day	10; 29.2	15; 60.0	10; 29.2	15; 60.0
BOD_5, in mg/L; lbs/day	10; 29.2	15; 60.0	10; 29.2	15; 60.0
TSS, in mg/L; lbs/day	10; 29.2	15; 60.0	10; 29.2	15; 60.0
Copper, in µg/L	TBD	TBD	N/A	N/A
Lead, in µg/L	TBD	TBD	N/A	N/A
pH	Shall not be outside the range of 6.0 to 9.0 standard units.		Shall not be outside the range of 6.0 to 9.0 standard units.	
a-All of the flow discharged to the City's storm water collection system shall first pass through, at least, a ¼-inch mesh screening system in order to separate out solid material. All collected solid material shall not be resuspended into the wastewater, but rather shall be properly disposed of according the applicable local, state and federal regulations.				
"N/A"-Means Not Applicable				
"TBD"- Means To be Determined				

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

Monitoring for copper and lead is required. Clean sampling and analytical methods are specified in the permit because, without these procedures, sampling results can be compromised by the

presence of "phantom" copper or lead. For example, if the person taking the sample has currently handled copper pennies, the reported copper concentration could be elevated above the actual concentration in the Permittee's effluent. Copper and lead data collected during this permit cycle will be considered when developing the next permit for this facility.

The monitoring schedule is detailed in this permit under Special Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories.*

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

SCHEDULE OF COMPLIANCE

In order to assess the capability of the cooling tower following relocation of the tower and installation of a waste heat recovery system, Special Condition S8 of this permit requires the Permittee to accomplish a number of tasks during the proposed permit term.

They are to:

- Submit work plans, for Departmental approval, regarding the installation of a heat exchanger and relocation of the cooling tower.
- Install a heat exchanger and relocate the cooling tower according to approved plans.
- Certify, via an outside contractor, the cooling tower is well maintained and functioning properly.
- Develop a sampling and analysis plan to assess the efficiency of the cooling tower and quantify any impacts the heated discharge has upon the water quality of New Shanno Ditch.
- Submit environmental monitoring data monthly while in operation and, one year prior to permit renewal, submit a summary of the environmental data and cooling tower data with conclusions as an amendment to the 2002 Final Engineering Report for Container Cooling Water Treatment System for Departmental approval.

At the end of the permit period, the Department will determine a new temperature limit based on monitoring in accordance with the Permittee's approved Sampling and Analysis Plan (SAP). If the planned improvements to the cooling system are determined to represent AKART, reasonable potential will be determined using the appropriate dilution factors.

SPILL PLAN

The Permittee developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs some time ago. The proposed permit requires the Permittee to update this plan and submit it to the Department for approval.

SOLID WASTE PLAN

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste.

This proposed permit requires, under authority of RCW 90.48.080, that the Permittee update its existing solid waste plan to prevent solid waste from causing pollution of waters of the state. The plan must be submitted to the local permitting agency for approval, if necessary, and to the Department.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human

health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for 5 years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Washington State Department of Ecology.

Laws and Regulations(http://www.ecy.wa.gov/laws-rules/index.html)

Permit and Wastewater Related Information
(http://www.ecy.wa.gov/programs/wq/wastewater/index.html

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

The Department published a Public Notice of Draft (PNOD) on May 22, 2006 in the Yakima Herald Republic to inform the public that an application, draft permit and fact sheet were available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Central Regional Office
15 West Yakima Avenue, Suite 200
Yakima, WA 98902

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30 day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 509/457-7105, or by writing to the address listed above.

This permit and fact sheet were written by Richard Marcley.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform

bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Responsible Corporate Officer-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at http://www.ecy.wa.gov

See next page.

```
CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX-GI Version 4.3GT
                       HYDRO3:Version-4.3.0.2  June,2005
SITE NAME/LABEL:                Del Monte #125
  DESIGN CASE:                  Del Monte New Shanno Mixing
  FILE NAME:                    Y:\WPFILES\MARCLEY\CINDY DRAFTS\Del Monte #125\
Using subsystem CORMIX3:        Buoyant Surface Discharges
  Start of session:             03/08/2006--15:37:52
*******************************************************************************
SUMMARY OF INPUT DATA:
-------------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                         = bounded
  Width                          BS     = 0.46 m
  Channel regularity             ICHREG = 1
  Ambient flowrate               QA     = 0.23 m^3/s
  Average depth                  HA     = 0.37 m
  Depth at discharge             HD     = 0.37 m
  Ambient velocity               UA     = 1.3547 m/s
  Darcy-Weisbach friction factor F      = 0.0247
    Calculated from Manning's n         = 0.015
  Wind velocity                  UW     = 0 m/s
Stratification Type              STRCND = U
  Surface temperature                   = 19
 degC
  Bottom temperature                    = 19 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                RHOAS  = 998.4063 kg/m^3
  Bottom density                 RHOAB  = 998.4063 kg/m^3
-------------------------------------------------------------------------------
  ---------------------------------------------------------------
  DISCHARGE PARAMETERS:           Buoyant Surface Discharge
    Discharge located on                = left bank/shoreline
    Discharge configuration             = flush discharge
    Distance from bank to outlet  DISTB = 0 m
    Discharge angle               SIGMA = 90 deg
    Depth near discharge outlet   HDO   = 0.36 m
    Bottom slope at discharge     SLOPE = 5 deg
    Rectangular discharge:
      Discharge cross-section area AO   = 0.1296 m^2
      Discharge channel width      BO   = 0.36 m
      Discharge channel depth      HO   = 0.36 m
      Discharge aspect ratio       AR   = 1
    Reduced discharge channel due to intrusion:
      Cross-section area           AO   = 0.0804 m^2
      Channel width                BO   = 0.36 m
      Channel depth                HO   = 0.22 m
      Aspect ratio                 AR   = 0.62
    Discharge flowrate             QO   = 0.011327 m^3/s
    Discharge velocity             UO   = 0.14 m/s
    Discharge temperature (freshwater)  = 47 degC
      Corresponding density        RHOO = 989.3617 kg/m^3
    Density difference             DRHO = 9.0445 kg/m^3
    Buoyant acceleration           GPO  = 0.0888 m/s^2
    Discharge concentration        CO   = 26 deg.C
    Surface heat exchange coeff.   KS   = 0.000000 m/s
    Coefficient of decay           KD   = 0 /s
  ---------------------------------------------------------------

********************** REGULATORY MIXING ZONE SUMMARY *************
No RMZ has been specified.
However:
The ambient water quality standard was encountered at the following
  plume position:
  Water quality standard                = 19  deg.C
Corresponding dilution                  = 1.4
  Plume location:                     x = 1.58 m
    (centerline coordinates)          y = 0 m
                                      z = 0 m
  Plume dimensions:           half-width = 0.11 m
                               thickness = 0.10 m
```

DMR DATA
TEMPERATURE
MAX
°C

Value	
1-Aug-03	38.8
1-Sep-03	35
1-Oct-03	40
1-Aug-04	37.7
1-Sep-04	44.4
1-Oct-04	44.4
1-Nov-04	42.78
1-Mar-05	
1-Aug-05	41.66
1-Sep-05	46.11
1-Oct-05	41.06
AVG	41.191
MAX	46.11
95th	44.571
99th	45.9561

DMR DATA

DATE	COPPER µg/L	LEAD µg/L
8/1/2002	8.1	1.3
9/1/2002	4.35	0.9
10/1/2002	5.45	1.1
9/1/2003	0.02	0.001
9/1/2004	2.6	1.1
11/1/2004	5.8	1
9/1/2005	2	0.6
10/1/2005	5.1	0.5

REASONABLE POTENTIAL **CALCULATIONS**

This spreadsheet calculates the reasonable potential to exceed state water quality standards for a small number of samples. The procedure and calculations are done per the procedure in Technical Support Document for Water Quality-based Toxics Control, U.S. EPA, March, 1991 (EPA/505/2-90-001) on page 56. User input columns are

Parameter	Metal Criteria Translator as decimal	Metal Criteria Translator as decimal	Ambient Conc (metals as dissolved)	State Water Quality Standard		Max concentration at edge of...		LIMIT REQ'D?	Effluent percentile value		Max effluent conc. measured (metals as total recoverable)	Coeff Variation		# of samp	Multiplier	Acute Dil'n Factor	Chronic Dil'n Factor
Parameter	Acute	Chronic	ug/L	ug/L	ug/L	ug/L	ug/L			Pn	ug/L	CV	s	n			
Copper	1.00	1.00	1.3800	10.52	7.34	10.51	5.94	NO	0.95	0.717	5.80	0.60	0.55	9.00	1.81	1.00	2.00
Lead	0.47	0.47	0.4100	36.88	1.44	0.89	0.89	NO	0.95	0.741	1.10	0.60	0.55	10	1.74	1.00	1.00

APPENDIX D--RESPONSE TO COMMENTS

City of Yakima Comments:

Dear Ms. Huwe,

The City of Yakima has the following comments pertaining to the proposed Del Monte NPDES Permit No. WA-005067-9 to be issued by the Department of Ecology for their can cooling wastewater discharge to the City of Yakima's stormwater collection system:

Permit

1. The effluent limitations for Outfall #001 as set by Ecology:

How will the proposed limits set by Ecology for the Del Monte discharge coincide and work with the limits of the proposed General Stormwater Permit?

Department's Response:

We are issuing an NPDES permit separate from the City's stormwater permit. The fact sheet covers what we are doing. The municipal stormwater general permit has not been written yet. There are many industries that discharge to stormwater systems on the west side and several on this side of the Cascades. The general stormwater permit will need to recognize those permits.

City of Yakima Comments:

Fact Sheet

1. It is stated on page 10, "Process wastewater discharges will be addressed in an upcoming State Waste Discharge permit issued by the City of Yakima."

The City of Yakima's Pretreatment Program will be issuing Del Monte a NPDES permit for their process wastewater to the City's POTW.

Department's Response:

The City of Yakima will issue its own permit under its delegated pretreatment program to Del Monte for the discharge of process wastewater to the Yakima wastewater treatment facility. This is a City permit and not a State or NPDES permit.

If you have any questions, please feel free to contact me.

Sincerely,

Scott Schafer
Assistant Manager
Wastewater Division
City of Yakima
(509) 575-6077